

Appendix B

Meteorological Data

This section contains meteorological data derived from various regulatory and non-regulatory sites. The data provides a comparative analysis of winds speed, wind direction, wind gusts and concentration data. Please note that meteorological instruments measure at different heights, and at different time intervals. By taking, the actual time of measurement and assuring that all data represented is in Pacific Standard Time (PST) there is uniformity of the data. In addition, not all stations measure at the exact same time, i.e. measurements at 053 and 056 therefore, comparisons are measurements within a 60-minute period. While there may be some overlapping and slight differences the comparative analysis provides the reader with a better understanding of the regional effect of the Exceptional Event.

FIGURE B-1
METEOROLOGICAL AND AIR QUALITY SITES REFERENCED IN THIS DOCUMENT



Fig. B-1: A collection meteorological and air quality sites referenced in this document. Base map from Google Earth.

IMPERIAL COUNTY SITES FIGURES B-2 THROUGH B-9

FIGURE B-2
IMPERIAL COUNTRY AIRPORT (KIPL)
WIND SPEED (AVERAGES), GUSTS & DIRECTION

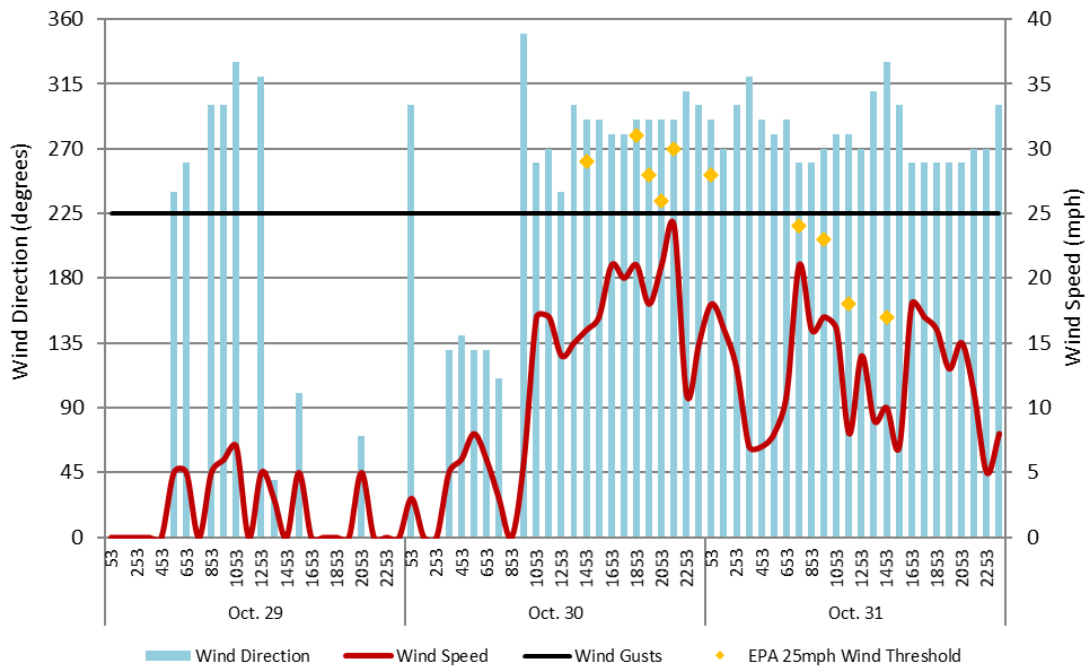
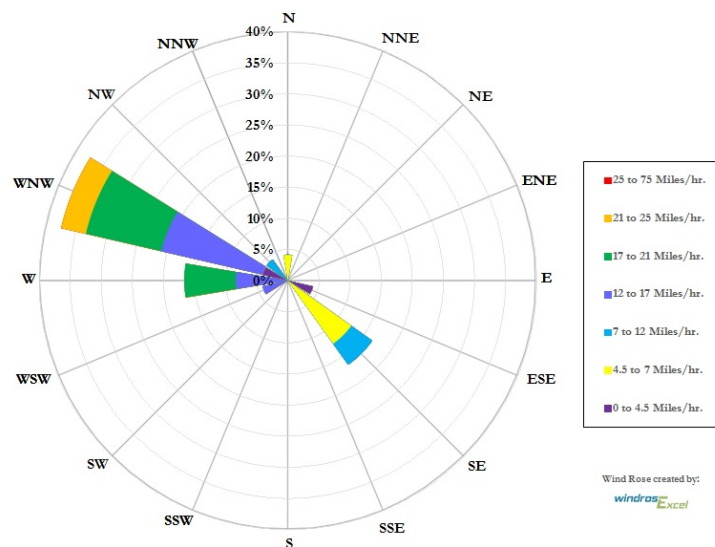


FIGURE B-3
IMPERIAL COUNTRY AIRPORT (KIPL) WIND ROSE – OCTOBER 30, 2016



Figs. B-2 & B-3: Imperial Airport meteorological data for October 30, 2016 shows that while winds were just under 25 mph, gust did exceed the threshold. Wind data from the NCEI's QCLCD system.

FIGURE B-4
EL CENTRO NAF (KNJK)
WIND SPEED (AVERAGES), GUSTS & DIRECTION

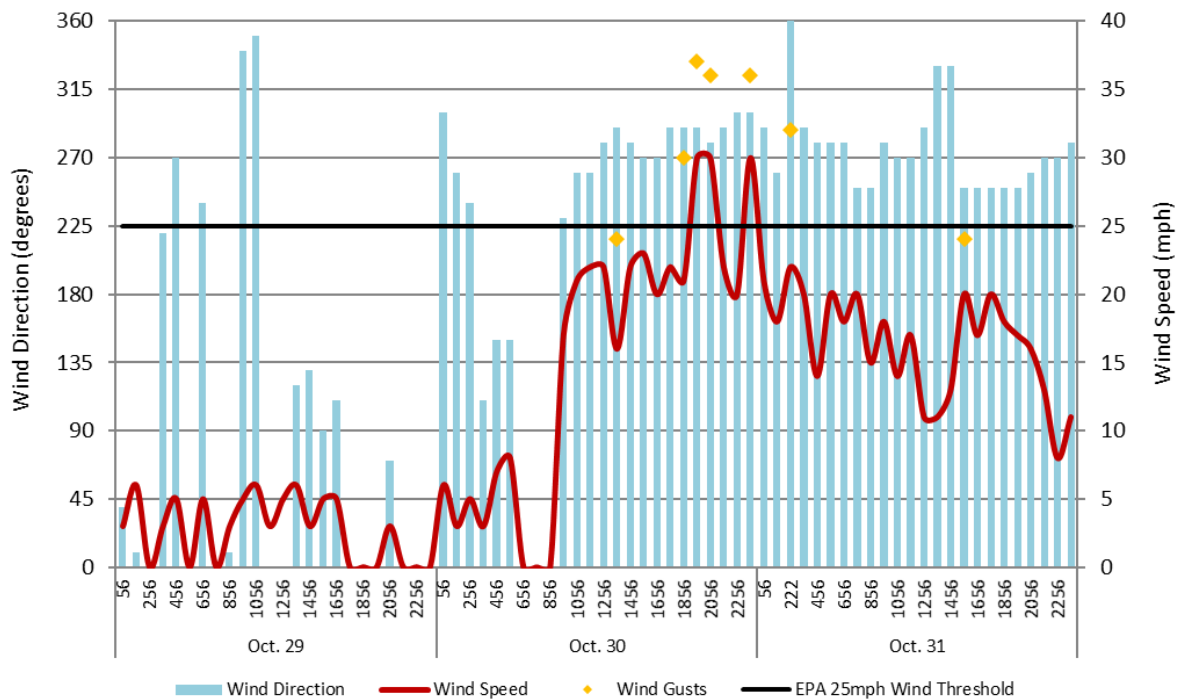
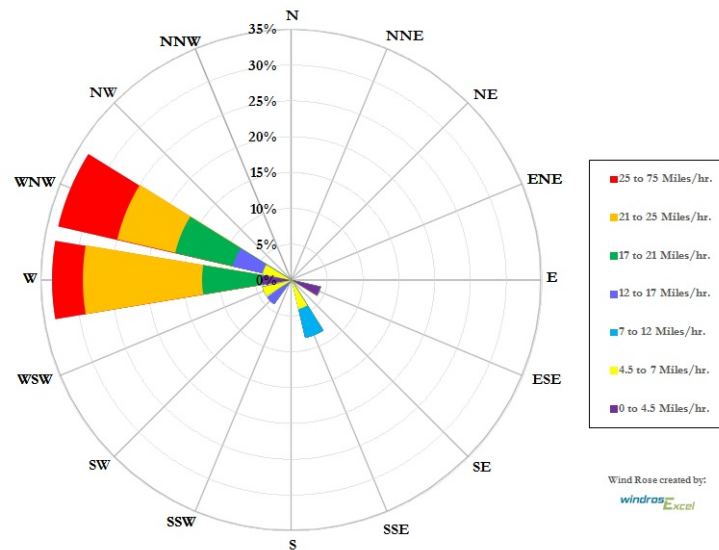
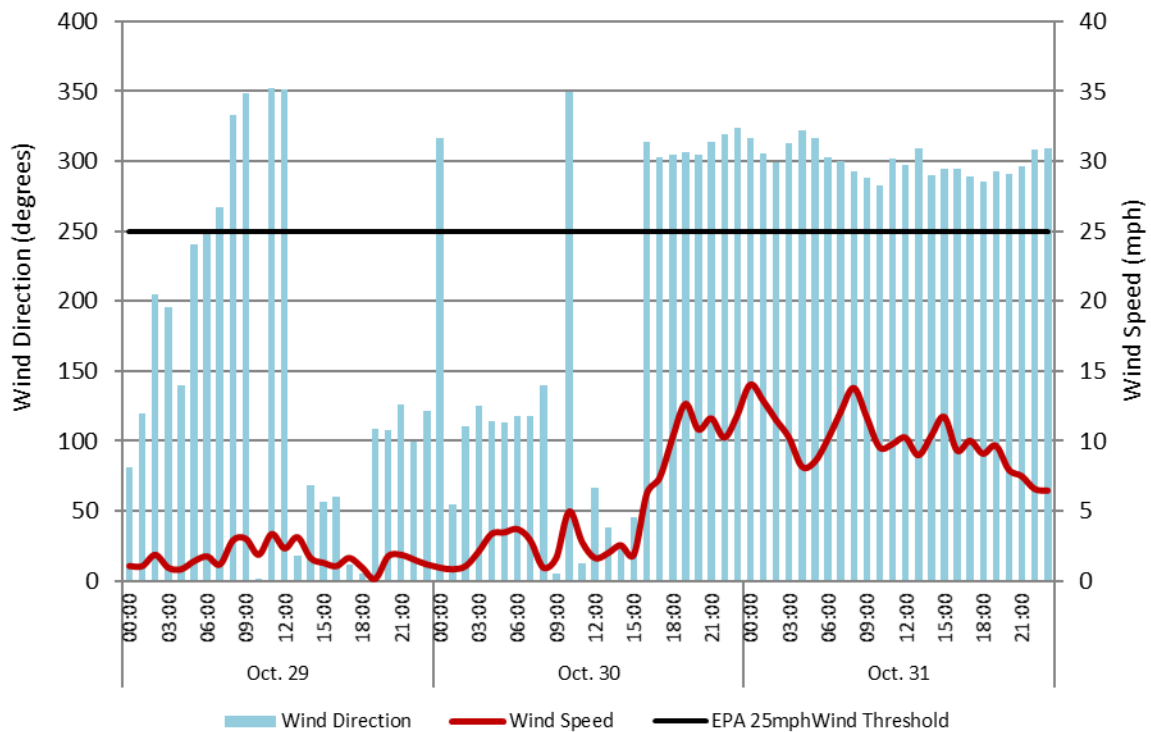


FIGURE B-5
EL CENTRO NAF (KNJK) WIND ROSE – OCTOBER 30, 2016

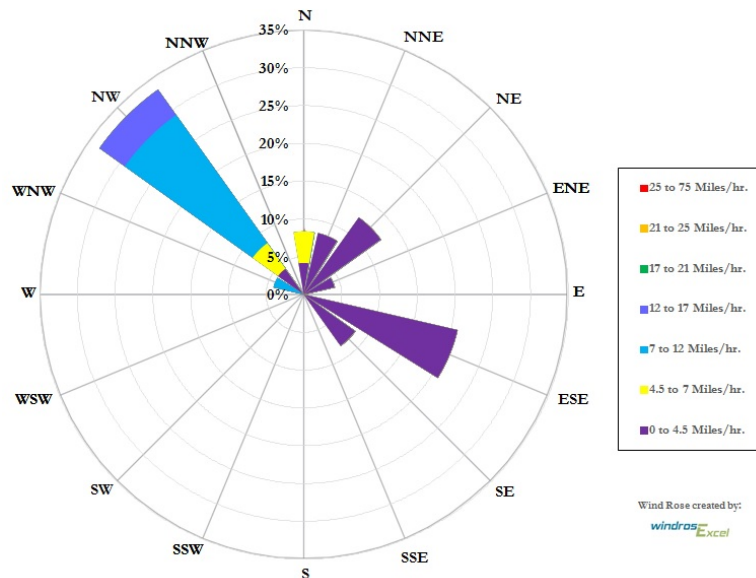


Figs. B-4 & B-5: El Centro NAF meteorological data for October 30, 2016 shows that winds were over 25 mph. Wind data from the NCEI's QCLCD system.

**FIGURE B-6
CALEXICO
WIND SPEED & DIRECTION**

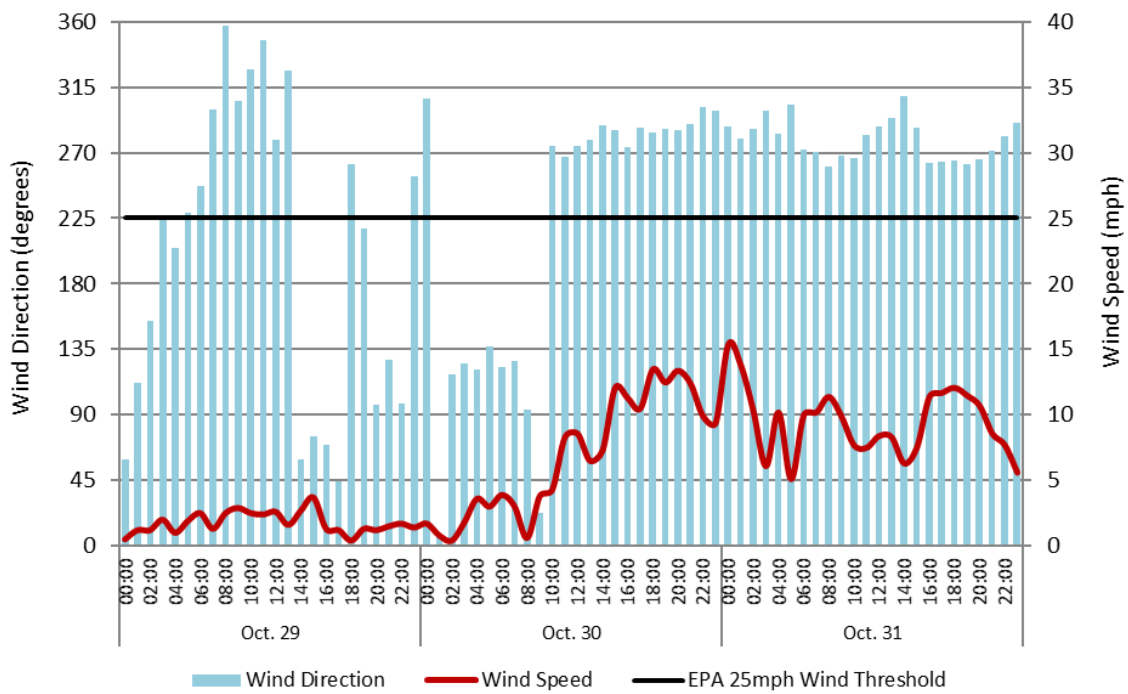


**FIGURE B-7
CALEXICO WINDROSE – OCTOBER 30, 2016**

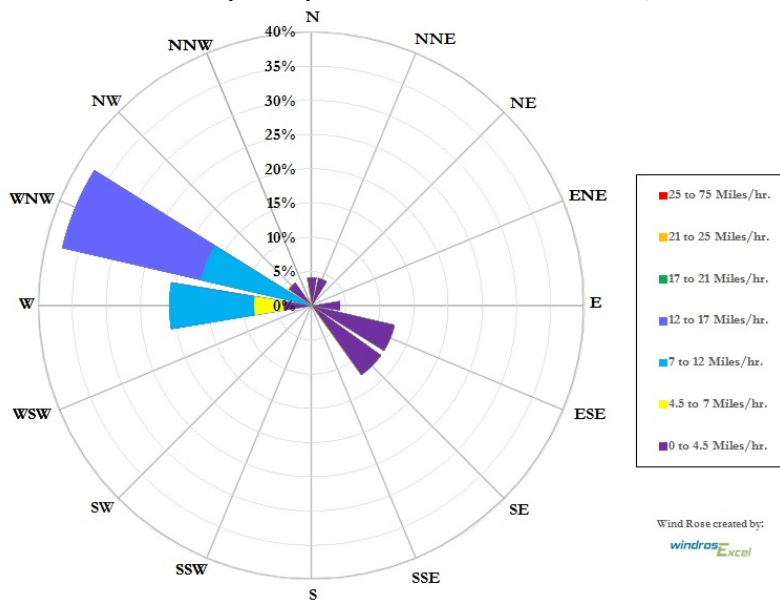


Figs. B-6 & B-7: Calexico meteorological data for October 30, 2016 shows that the station received predominantly northwest winds under 25 mph. Wind data from the NCEI's QCLCD system.

FIGURE B-8
EL CENTRO (9TH St)
WIND SPEED & DIRECTION



FIGURES B-9
EL CENTRO (9TH ST) WIND ROSE – OCTOBER 30, 2016



Figs. B-8 & B-9: El Centro station meteorological data for October 30, 2016 shows a distinct W-WNW direction. Wind data from the EPA's AQS data bank.

FIGURE B-10
NILAND (ENGLISH RD)
WIND SPEED & DIRECTION

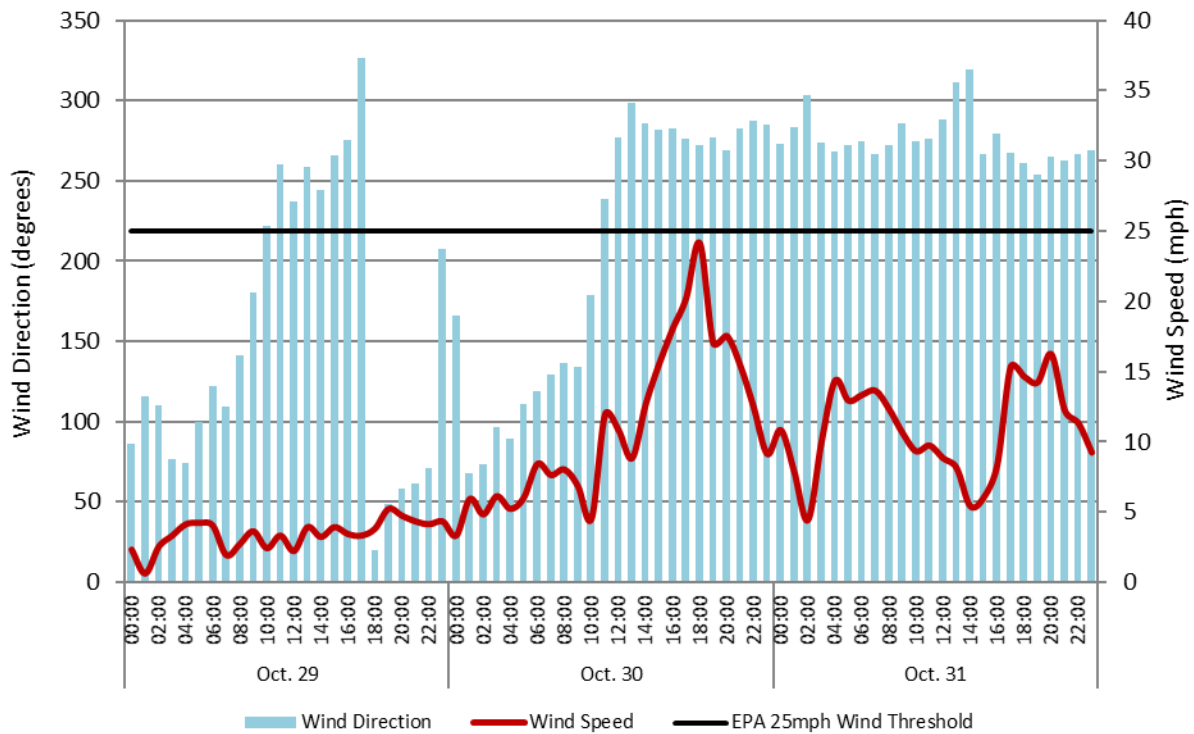
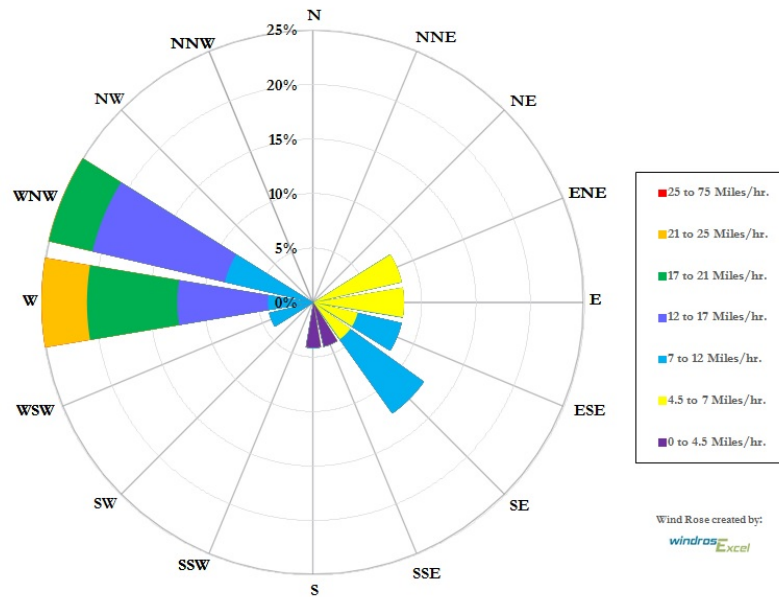
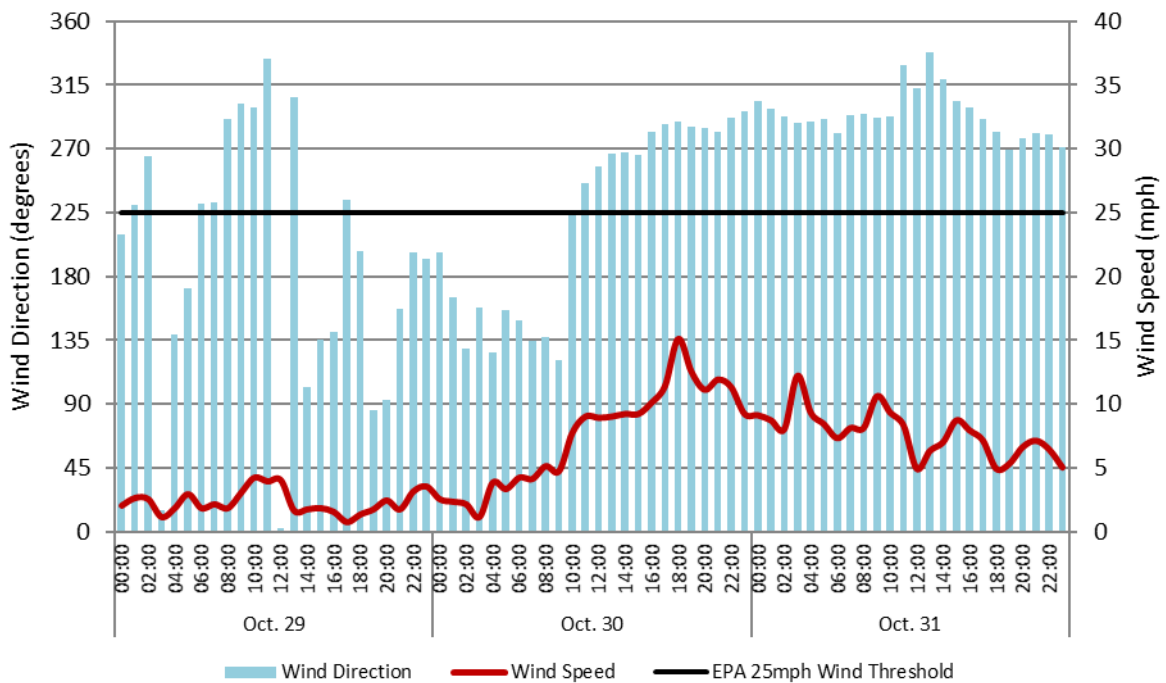


FIGURE B-11
NILAND (ENGLISH RD) WINDROSE – OCTOBER 30, 2016

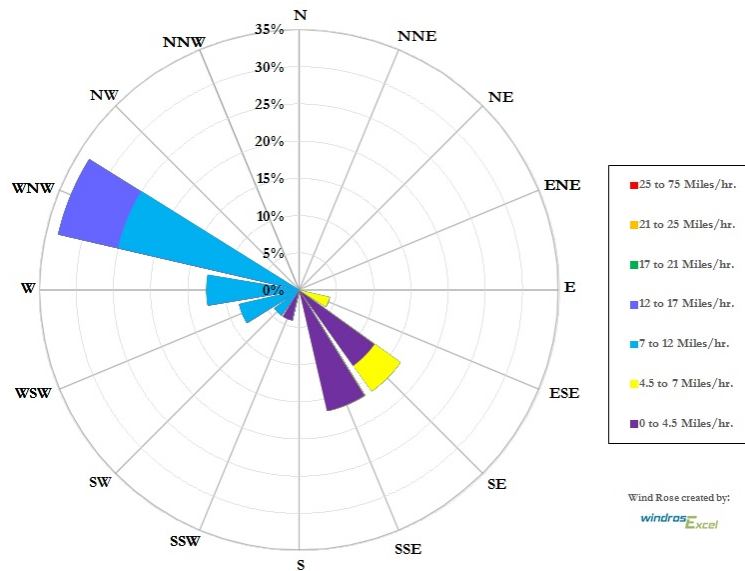


Figs. B-10 & B-11: Niland wind data for October 30, 2016 shows a distinct W-WNW direction for the higher winds. Wind data from the EPA's AQS data bank.

**FIGURE B-12
WESTMORLAND
WIND SPEED & DIRECTION**



**FIGURE B-13
WESTMORLAND WINDROSE – OCTOBER 30, 2016**



Figs. B-12 & B-13: Westmorland station meteorological data for October 30, 2016 shows a distinct WNW direction for the higher winds. Wind data from the EPA's AQS data bank.

EASTERN RIVERSIDE COUNTY SITES

FIGURE B-14
BLYTHE AIRPORT (KBLH)
WIND SPEED (AVERAGES), GUSTS & DIRECTION

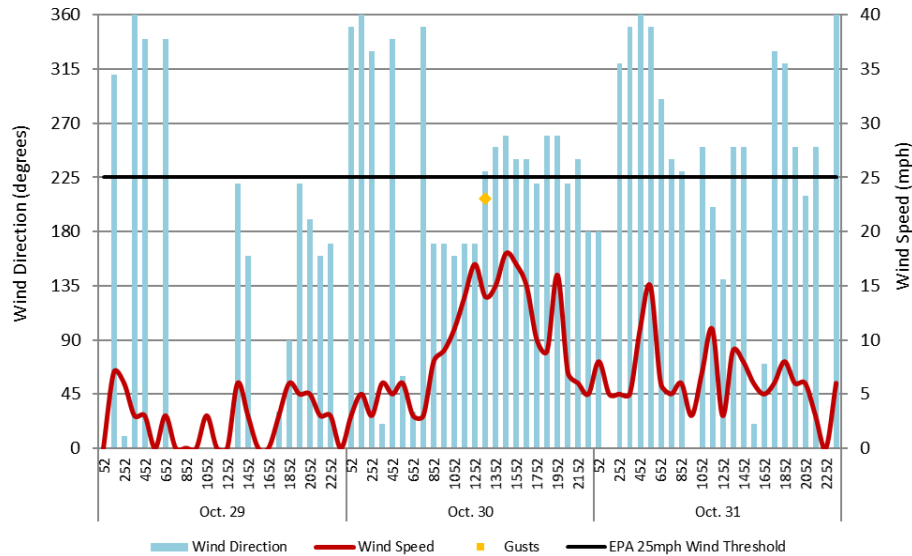


Fig. B-14: Wind data from the NCEI's QCLCD system.

FIGURE B-15
JACQUELINE COCHRAN REGIONAL AIRPORT (KTRM)
WIND SPEED (AVERAGES), GUSTS & DIRECTION

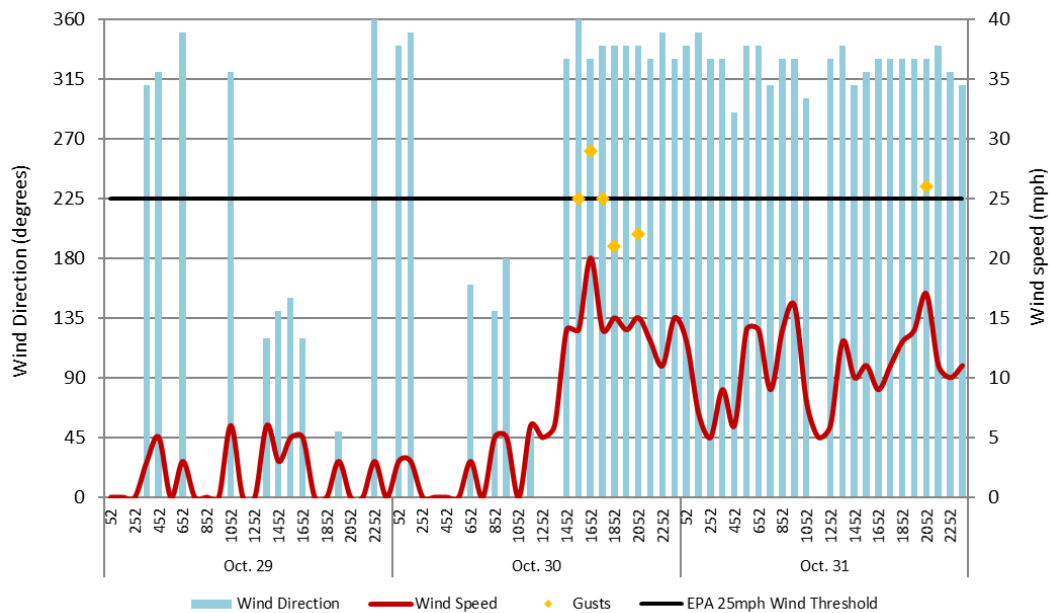


Fig. B-15: Wind data from the NCEI's QCLCD system.

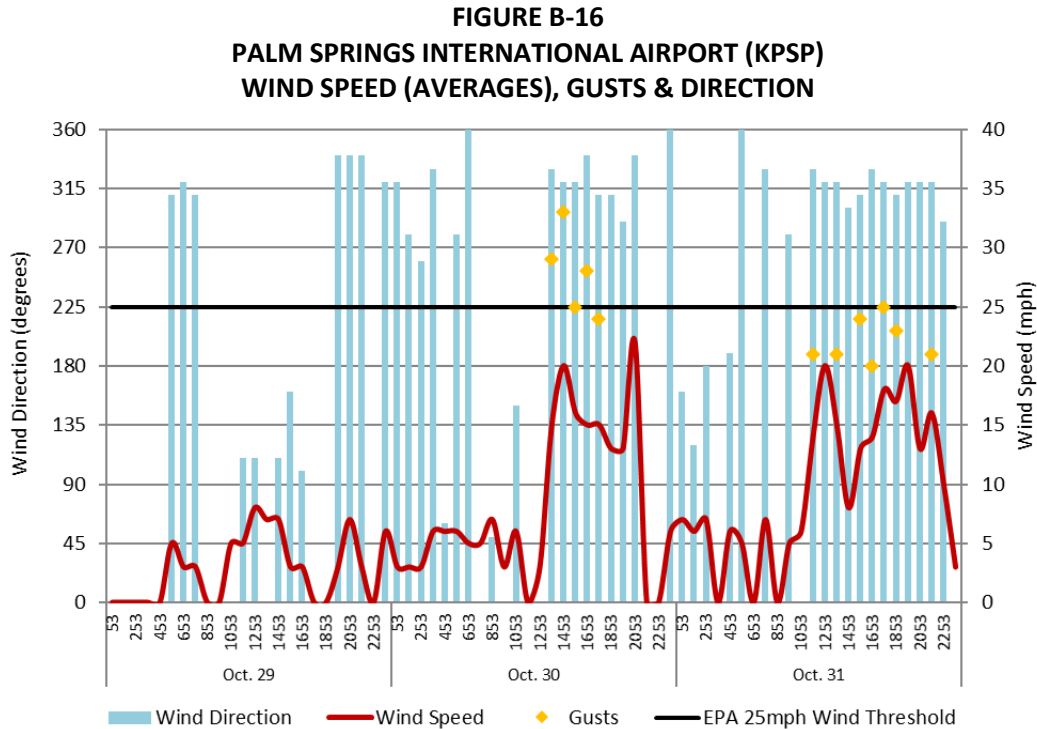


Fig. B-16: Wind data from the NCEI's QCLCD system.

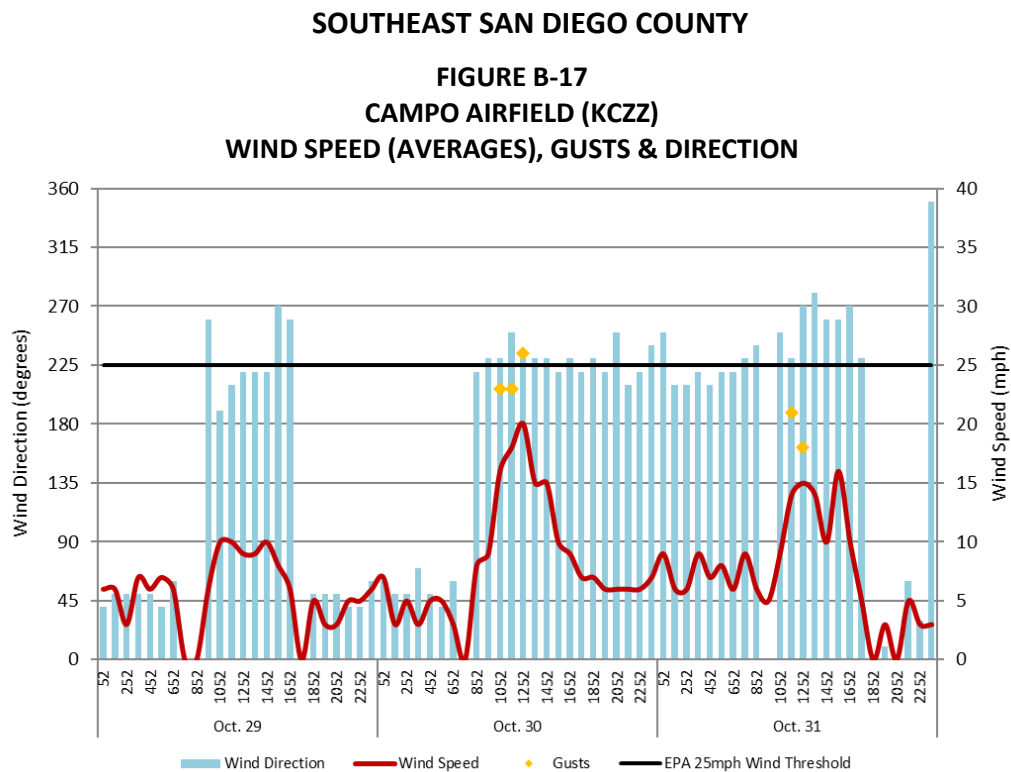
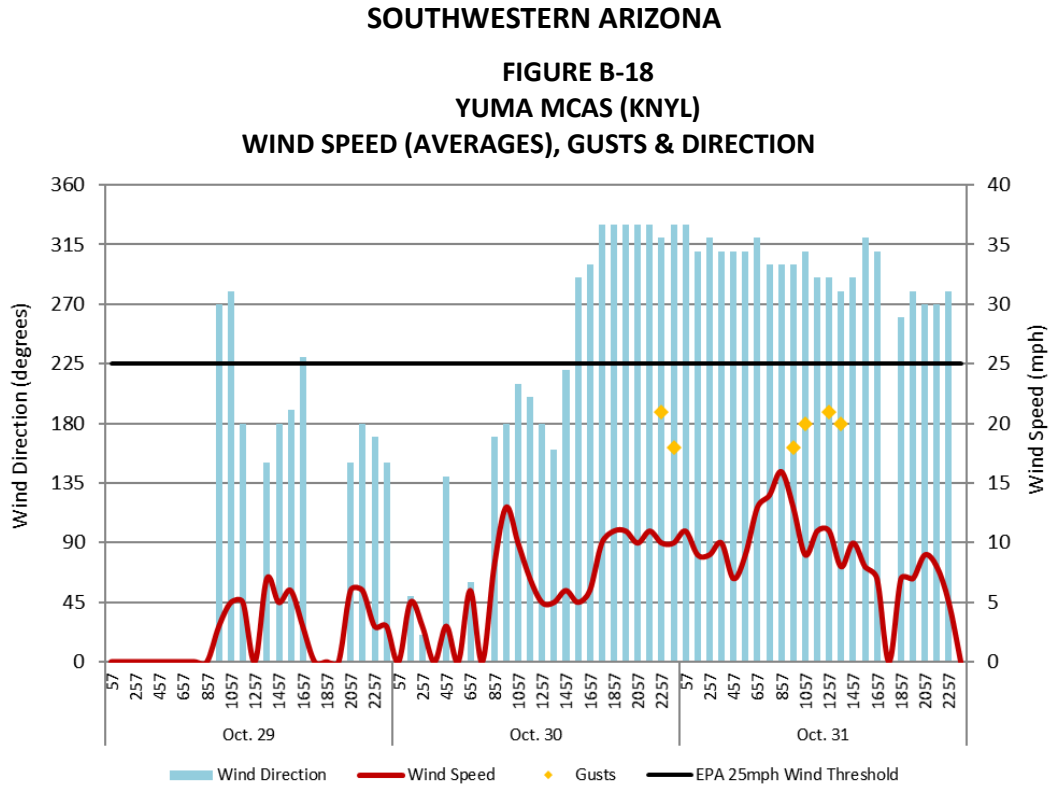


Fig. B-17: Wind data from the NCEI's QCLCD system.



Figs. B-18: Yuma MCAS (KNYL), downstream from Imperial County, did not have winds of 25 mph. Data from the NCEI QCLCD system.

UPSTREAM WIND SITES

The following sites were upstream from Imperial County during the October 30, 2016 wind event.

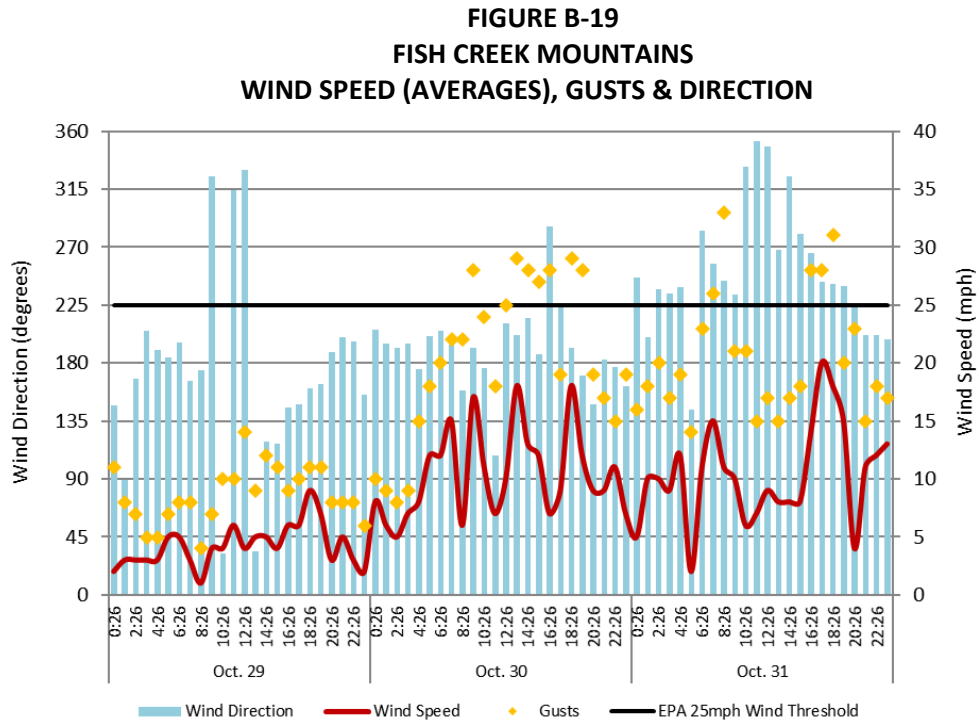
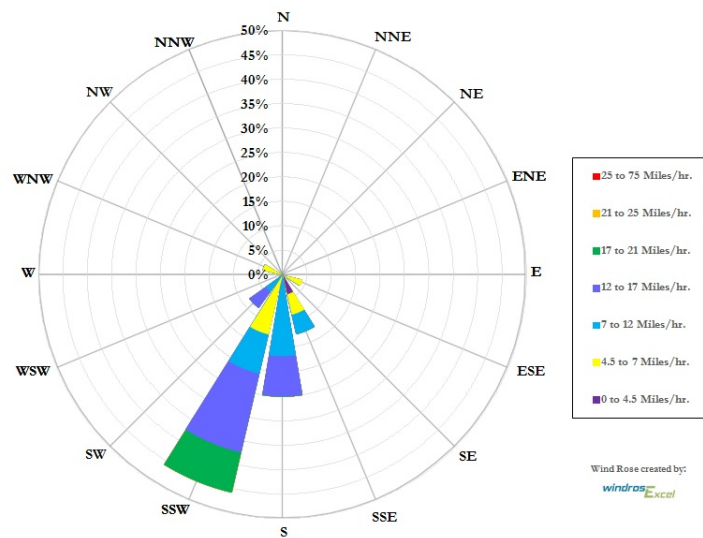


FIGURE B-20
FISH CREEK MOUNTAINS WIND ROSE – OCTOBER 30, 2016



Figs. B-19 & B-20: The Fish Creek Mountains (FHCC1) near the desert floor (elev. 781 ft.) had gusts of over 25 mph. Data from the University of Utah's MesoWest.

FIGURE B-21
OCOTILLO WELLS
WIND SPEED (AVERAGES), GUSTS & DIRECTION

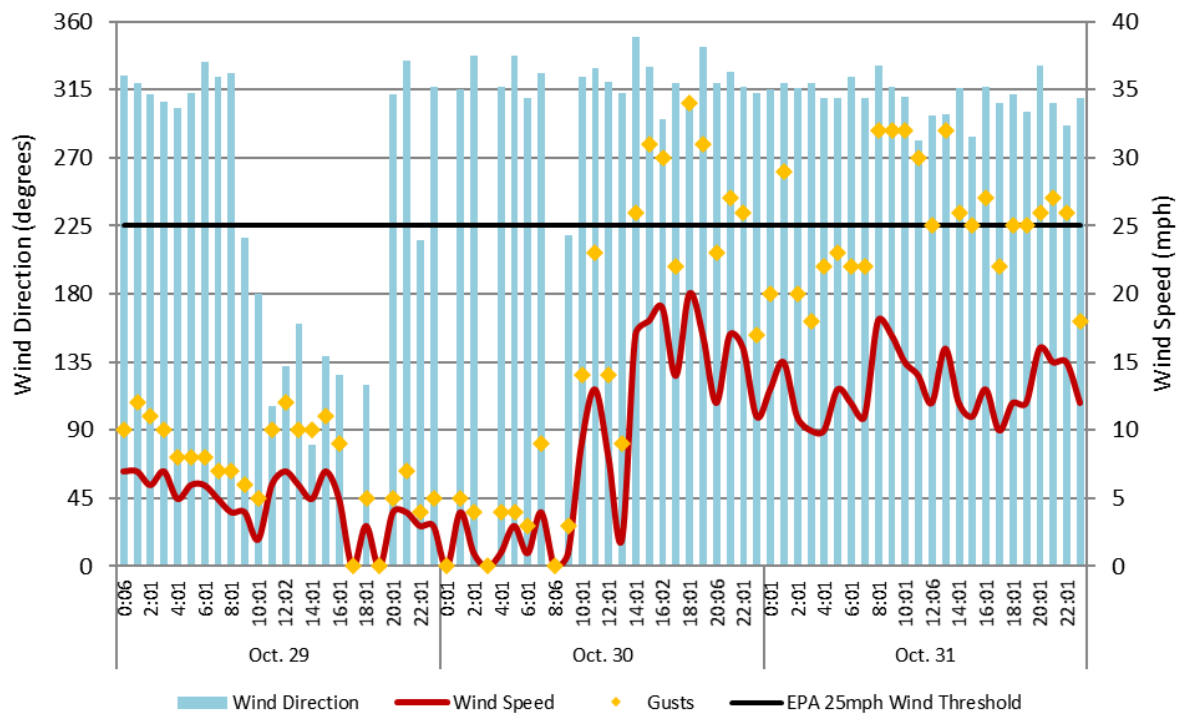
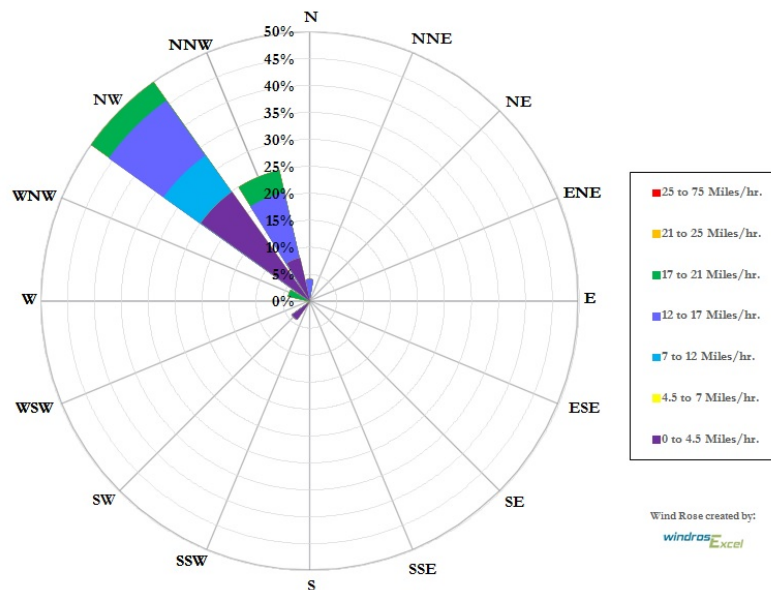
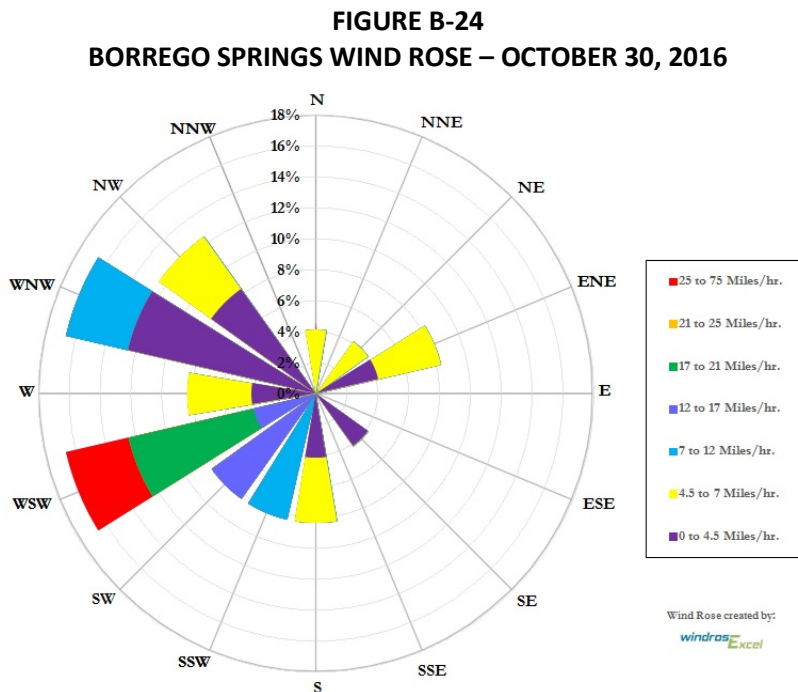
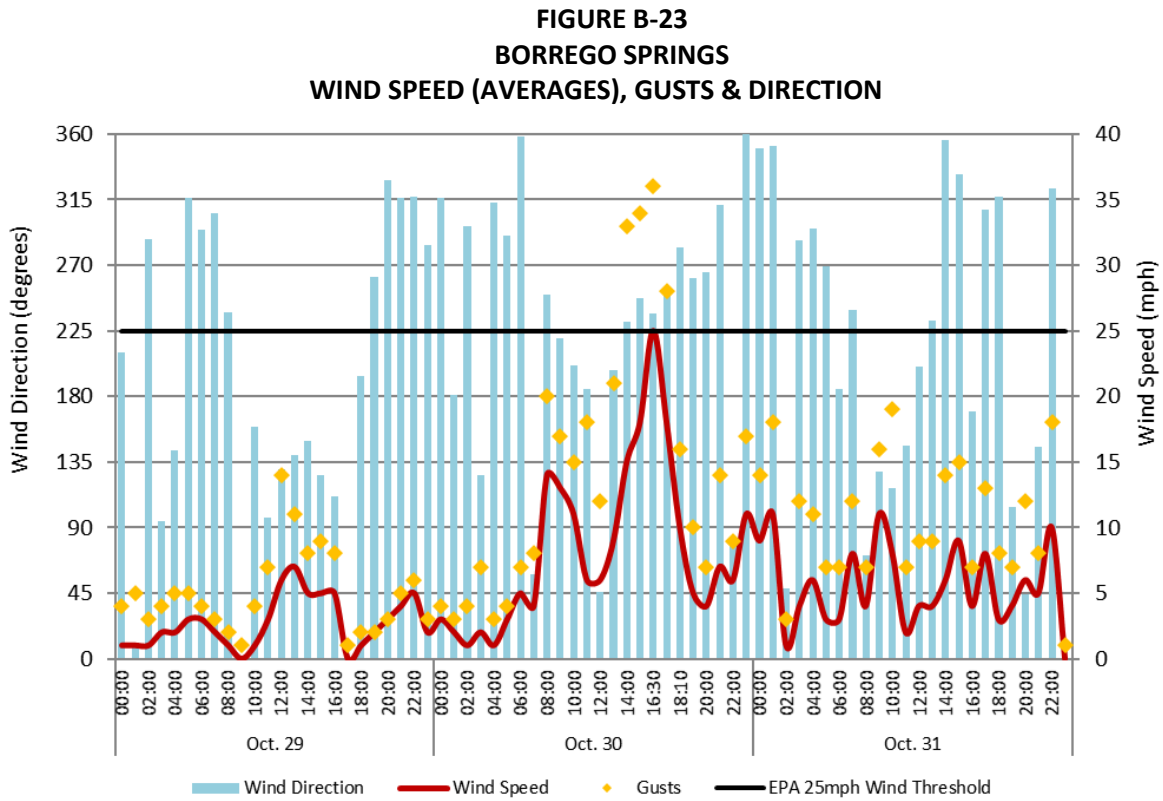


FIGURE B-22
OCOTILLO WELLS WIND ROSE – OCTOBER 30, 2016



Figs. B-21 & B-22: Ocotillo Wells (AS938/KD6RSQ5) near the desert floor (elev. 419 ft.) had gusts of over 25 mph. Data from the University of Utah's MesoWest.



Figs. B-23 & B-24: Borrego Springs (BRSBGD) near the desert floor (elev. 720 ft.) had both winds and gusts of 25 mph. Data from the University of Utah's MesoWest.

FIGURE B-25 IMPERIAL COUNTY AIRPORT (KIPL) QCLCD – OCTOBER 30, 2016

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Elev: -58 ft. Lat: 32.8342° N Lon: -115.5786° W
Station: IMPERIAL CO AIRPORT, CA US WBAN:03144

Local Climatological Data
Hourly Observations
October 2016
Generated on 07/03/2017

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Time (LST)	Station Type	Sky Conditions	Visi- bility	Weather Type (see documentation) AU AW MW	Dry Bulb Temp		Wet Bulb Temp		Dew Point Temp		Rel Hum %	Wind Speed (MPH)	Wind Dir (Deg)	Wind Gusts (MPH)	Station Press (inHg)	Press. Tend	Net 3-Hr Change (inHg)	Sea Level Press. (inHg)	Report Type	Precip Total (in)	Alti-meter Setting (inHg)
						(F)	(C)	(F)	(C)	(F)	(C)											
30	0053	7	CLR:00	10.00		74	23.3	65	18.3	56	13.3	54	3	300		29.93			29.87	FM-15	0.00	29.87
30	0153	7	CLR:00	10.00		72	22.2	63	17.4	55	12.8	55	0	000		29.92			29.87	FM-15	0.00	29.86
30	0253	7	CLR:00	10.00		71	21.7	63	17.4	57	13.9	61	0	000		29.92			29.86	FM-15	0.00	29.86
30	0353	7	CLR:00	10.00		71	21.7	63	17.1	55	12.8	57	5	130		29.92	5	+0.01	29.86	FM-15	0.00	29.86
30	0453	7	CLR:00	10.00		70	21.1	63	17.1	57	13.9	64	6	140		29.93			29.87	FM-15	0.00	29.87
30	0553	7	CLR:00	10.00		70	21.1	65	18.3	62	16.7	76	8	130		29.93			29.87	FM-15	0.00	29.87
30	0653	7	CLR:00	10.00		71	21.7	65	18.3	61	16.1	71	6	130		29.96	3	-0.03	29.90	FM-15	0.00	29.90
30	0753	7	CLR:00	10.00		73	22.8	68	19.8	65	18.3	76	3	110		29.98			29.92	FM-15	0.00	29.92
30	0853	7	CLR:00	10.00		78	25.6	70	21.4	66	18.9	67	0	000		29.99			29.93	FM-15	0.00	29.93
30	0953	7	CLR:00	10.00		84	28.9	73	23.1	64	17.8	51	6	350		29.99	1	-0.03	29.93	FM-15	0.00	29.93
30	1053	7	CLR:00	10.00		87	30.6	76	24.2	59	15.0	39	17	260		29.96			29.91	FM-15	0.00	29.90
30	1153	7	CLR:00	10.00		89	31.7	78	25.3	58	14.4	35	17	270		29.94			29.88	FM-15	0.00	29.88
30	1253	7	CLR:00	10.00		90	32.2	79	26.0	57	13.9	33	14	240		29.92	6	+0.07	29.86	FM-15	0.00	29.86
30	1353	7	CLR:00	10.00		89	31.7	78	25.4	57	13.9	34	15	300		29.90			29.84	FM-15	0.00	29.84
30	1453	7	CLR:00	10.00		90	32.2	79	26.0	57	13.9	33	16	290	29	29.90			29.84	FM-15	0.00	29.84
30	1553	7	CLR:00	10.00		86	30.0	75	23.7	58	14.4	39	17	290		29.90	5	+0.02	29.84	FM-15	0.00	29.84
30	1653	7	CLR:00	10.00		83	28.3	72	22.2	57	13.9	41	21	280		29.90			29.84	FM-15	0.00	29.84
30	1753	7	CLR:00	10.00		81	27.2	70	21.3	57	13.9	44	20	280		29.92			29.85	FM-15	0.00	29.85
30	1853	7	CLR:00	10.00		78	25.6	68	20.0	57	13.9	48	21	290	31	29.94	3	-0.04	29.87	FM-15	0.00	29.88
30	1953	7	CLR:00	9.00		76	24.4	67	19.3	58	14.4	54	18	290	28	29.94			29.88	FM-15	0.00	29.88
30	2053	7	CLR:00	10.00		75	23.9	66	18.8	57	13.9	54	21	290	26	29.95			29.89	FM-15	0.00	29.89
30	2153	7	CLR:00	10.00		75	23.9	66	18.8	57	13.9	54	24	290	30	29.96	3	-0.03	29.91	FM-15	0.00	29.90
30	2253	7	CLR:00	10.00		73	22.8	64	17.9	56	13.3	55	11	310		29.97			29.91	FM-15	0.00	29.91
30	2353	7	CLR:00	10.00		72	22.2	63	17.4	55	12.8	55	15	300		29.97			29.91	FM-15	0.00	29.91

FIGURE B-25 EL CENTRO NAF (KNJK) QCLCD – OCTOBER 30, 2016

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Elev: -42 ft. Lat: 32.8167° N Lon: -115.8833° W
Station: EL CENTRO NAF, CA US WBAN:23199

Local Climatological Data
Hourly Observations
October 2016
Generated on 07/03/2017

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Time (LST)	Station Type	Sky Conditions	Visi- bility	Weather Type (see documentation) AU AW MW	Dry Bulb Temp		Wet Bulb Temp		Dew Point Temp		Rel Hum %	Wind Speed (MPH)	Wind Dir (Deg)	Wind Gusts (MPH)	Station Press (inHg)	Press. Tend	Net 3-Hr Change (inHg)	Sea Level Press. (inHg)	Report Type	Precip Total (in)	Alti-meter Setting (inHg)
						(F)	(C)	(F)	(C)	(F)	(C)											
30	0056	7	CLR:00	10.00		71	21.7	62	16.7	52	11.1	51	6	300		29.93	6	+0.02	29.94	FM-15	0.00	29.89
30	0156	7	CLR:00	10.00		73	22.8	64	17.6	53	11.7	50	3	260		29.92			29.93	FM-15	0.00	29.88
30	0256	7	CLR:00	10.00		71	21.7	62	16.7	52	11.1	51	5	240		29.92			29.92	FM-15	0.00	29.88
30	0356	7	CLR:00	10.00		69	20.6	61	16.1	53	11.7	57	3	110		29.92			29.92	FM-15	0.00	29.88
30	0456	7	CLR:00	10.00		68	20.0	61	16.1	55	12.8	63	7	150		29.93			29.93	FM-15	0.00	29.89
30	0556	7	CLR:00	10.00		68	20.0	61	16.3	56	13.3	65	8	150		29.93			29.93	FM-15	0.00	29.89
30	0656	7	CLR:00	10.00		68	20.0	62	16.7	58	14.4	70	0	000		29.96	3	-0.04	29.96	FM-15	0.00	29.92
30	0756	7	CLR:00	10.00		73	22.8	66	18.8	61	16.1	66	0	000		29.98			29.99	FM-15	0.00	29.94
30	0856	7	CLR:00	9.00		79	26.1	69	20.8	61	16.1	54	0	000		29.98			29.99	FM-15	0.00	29.94
30	0956	7	CLR:00	10.00		87	30.6	76	24.3	56	13.3	35	17	230		29.98	0	-0.02	29.99	FM-15	0.00	29.94
30	1056	7	CLR:00	10.00	-RA:02 (RA:61)	88	31.1	77	25.2	53	11.7	30	21	260		29.97			29.97	FM-15	T	29.93
30	1156	7	CLR:00	10.00	-RA:02 (RA:61)	89	31.7	79	26.0	52	11.1	28	22	260		29.94			29.95	FM-15	T	29.90
30	1256	7	CLR:00	10.00		90	32.2	80	26.7	52	11.1	27	22	280		29.92	8	+0.07	29.92	FM-15	T	29.88
30	1356	7	CLR:00	10.00		91	32.8	81	27.3	52	11.1	25	16	290	24	29.90			29.90	FM-15	T	29.85
30	1456	7	FEW:02 95	10.00	-RA:02 (RA:61)	91	32.8	81	27.2	53	11.7	27	22	280		29.90			29.91	FM-15	T	29.89
30	1556	7	CLR:00	10.00		86	30.0	75	24.0	53	11.7	32	23	270		29.91			29.91	FM-15	T	29.87
30	1656	7	CLR:00	10.00		84	28.9	73	22.9	53	11.7	34	20	270		29.91			29.91	FM-15	0.00	29.87
30	1756	7	CLR:00	10.00	-RA:02 (RA:61)	80	26.7	69	20.8	54	12.2	41	22	290		29.93			29.93	FM-15	T	29.89
30	1856	7	CLR:00	10.00	-RA:02 (RA:61)	78	25.6	68	19.8	54	12.2	43	21	290	30	29.95	3	-0.04	29.95	FM-15	T	29.91
30	1951	7	FEW:02 7	5.00	-RA:02 (RA:61)	77	25.0	67	19.4	55	13.0	47	28	280		29.94			29.94	FM-15	T	29.90
30	1956	7	FEW:02 6	5.00	-RA:02 (RA:61)	78	25.6	68	19.9	56	13.3	47	30	290	37	29.95			29.95	FM-15	T	29.91
30	2056	7	CLR:00	8.00	-RA:02 (RA:61)	76	24.4	66	19.0	55	12.8	48	30	280	36	29.96			29.96	FM-15	T	29.92
30	2156	7	CLR:00	10.00	-RA:02 (RA:61)	75	23.9	65	18.6	55	12.8	50	22	290		29.96	3	-0.02	29.97	FM-15	T	29.92
30	2256	7	CLR:00	10.00	-RA:02 (RA:61)	74	23.3	64	18.0	53	11.7	48	20	300		29.98			29.98	FM-15	T	29.94
30	2356	7	CLR:00	10.00	-RA:02 (RA:61)	73	22.8	64	17.5	52	11.1	48	30	300	36	29.98			29.98	FM-15	T	29.94